Notes, Assignments, Study Guides

Notes

- Introduction to Theory of Computation[1]
- Introduction to OCAML[2]
- OCAML basics[3]
- OCAML example: sets as lists (optional)[4]
- Alphabets, strings, substrings, empty string, lexicographic ordering[5]
- Alphabet and friends in OCAML[6]
- Languages, examples, constructions[7]
- Deterministic Finite Automata[8]
- DFAs in OCAML[9]
- Regular Languages[10]
- Implementation of union in OCAML[11]
- Non-deterministic automata, examples[12]
- Regular Expressions[13]
- Nonregular languages and the Pumping Lemma[14]
- Lexers[15]
- Context Free Grammars[16]
- Pushdown Automata definition[17]
- CFG <-> PDA[18]
- Pumping lemma for CFGs[19]
- Basics of Parsing[20]
- Turing Machines[21]
- Decidable Problems[22]

[1] notes/theory_intro.html
[2] notes/ocaml_intro.html
[3] notes/ocaml_basics.html
[4] notes/ocaml_sets.html
[5] notes/alphabet.html
[6] notes/ocaml_alphabet.html
[7] notes/languages.html
[8] notes/fin_aut_dfa.html
[9] notes/ocaml_dfa.html
[10] notes/fin_aut_dfa.html
[11] notes/ocaml_dfa.html
[12] notes/fin_aut_nfas.html
[13] notes/regexp.html
[14] notes/nonregular.html
[15] notes/lexers.html
[16] notes/cfg.html
[17] notes/pushdown_automata.html
[18] notes/cfg_pda.html
[19] notes/pumping_cfg.html
[20] notes/parsing.html
[21] notes/turing.html
[22] notes/decidable.html

- The Halting Problem[23]
- Reducibility[24]
- Mapping Reducibility[25]
- Time Complexity[26]
- The P and NP classes. P[27]
- NP-complete problems[28]

Assignments

- Assignment 1[29]
- Assignment 2[30]
- Assignment 3[31]
- Assignment 4[32]
- Assignment 5[33]
- Assignment 6[34]
- Assignment 7[35]
- Assignment 8[36]
- Assignment 9[37]
- Assignment 10[38]

Study Guides

- Midterm 1 study guide[39]
- Midterm 2 study guide[40]
- Final study guide[41]

---

[23] notes/halting.html
[24] notes/reducibility.html
[25] notes/mapping_reducibility.html
[26] notes/time_complexity.html
[27] notes/p_vs_np.html
[28] notes/np_complete.html
[29] assignments/1.html
[30] assignments/2.html
[31] assignments/3.html
[32] assignments/4.html
[33] assignments/5.html
[34] assignments/6.html
[35] assignments/7.html
[36] assignments/8.html
[37] assignments/9.html
[38] assignments/10.html
[39] notes/midterm1_study_guide.html
[40] notes/midterm2_study_guide.html
[41] notes/midterm3_study_guide.html